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ABSTRACT

This report concerns the training requirements of women workers arising from the introduction of new technology in the services sector of the Irish economy. Section 1 discusses the importance of the services sector as a source of employment for women workers. In Section 2, the structure of female employment in the services sector is explored with particular emphasis on the place of women workers in the occupational hierarchy. Section 3 contains four case studies of organizations within the services sector where new information technologies have been or are about to be introduced on an extensive scale. They cover a banking organization, a retail organization, a major public utility, and a local government agency--all of which are major employers of female workers. Section 4, on training institutions, concentrates on training programs particularly associated with new technology. Section 5 summarizes conclusions and recommends more emphasis on training and career development in negotiations concerning new technologies and inclusion of specific positive action initiatives in equal opportunities programs. (Fifteen data tables and 17 references are appended.) (YLB)

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Discussion Paper No. 29

INFORMATION TECHNOLOGY AND THE TRAINING AND CAREER DEVELOPMENT OF WOMEN: THE CASE OF IRELAND

by Ursula Barry

E052 670

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June 1989

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PREFACE

This discussion paper is one of a series of five contributions to a research project carried out by the Training Policies Branch on the implications of new information technologies for the career development of women working in the services sector. This research is both timely and important. Not only is the vast majority of women workers in many regions of the world employed in service industries, but it is precisely in this sector and the jobs women perform that new information technologies have been introduced on a large scale.

This area of research is comparatively new, but, patterns of reorganisation and restructuring of work have already been found to lead to both a reduction of jobs, and the creation of new employment opportunities. It appears however, that these new opportunities will emerge at higher professional and managerial levels and will be more accessible to men than women since they will not require the skills held by clerks and typists, but will be in the fields of systems and data analysis, programming, software design, etc. requiring higher levels of qualifications and specific scientific and technical backgrounds which many women do not have.

The future prospects for women in the services sector therefore, will depend to a great extent on whether they are given the opportunity to move into positions of greater responsibility and higher skill levels. Yet for change to occur, women need to receive appropriate training, guidance and career development opportunities. This issue has guided the work of the researchers who prepared case studies in France, India, Ireland, the Philippines and Sweden. While training is seen as one, if not a major contributing factor in improving the employment opportunities of women, it is also clear that it must be combined with other initiatives since the introduction of new technology affects all aspects of working life: worker's responsibilities, job content, skill requirements, workload and career prospects.

In this regard, the study has been designed to examine the roles of governments, workers' and employers' organisations. The way in which manpower and skills are deployed is, after all, influenced by government and management policies and priorities; the bargaining power and participation of trade unions in the introduction of new technologies and the restructuring of jobs; and the decisions taken by the management of enterprises.

Women require education and training to adapt to the changing work responsibilities and skill requirements brought about by the introduction of new technology. Only a massive training and retraining effort can eliminate the mismatch between the skills of female jobseekers and the types of job opportunities that are emerging. And although women need the right skills, they also need the opportunities to apply them, which entails an equal opportunity framework to facilitate their entry into jobs.

Merely declaring training and employment opportunities open to both women and men on an equal basis is not the solution for women precisely because it ignores the barriers which inhibit them from gaining equal benefits. Additional measures must be taken in specific areas and with specific target groups to bring about the desired change. As these studies suggest, it is not the technology itself which is the source of the problems confronting women workers, but economic, social and political factors which combine to confine them to low-paid, low-skilled jobs.

As a final note, we feel it is also important when considering strategies for change to take an international perspective, since the work of women in industrialised and developing countries is inextricably bound. In this regard, a final objective of this research is to bring to the operational activities of the Training Department in the fields of management development and vocational training, a better understanding of the factors which need to be considered in planning and implementing training programmes in the contexts of rapid technological change. It is hoped that the reader will also gain from the findings.

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INTRODUCTION

There has been growing concern over the past decade with the impact of new information technologies on work, particularly in the services sector where new technologies are extensively in use. Research has emphasised changes in employment levels, work organisation and job content. Forecasts of the impact of information technologies have ranged from those taking an extremely pessimistic outlook of impending job reductions and deskilling to those which have stressed the opportunities associated with new technologies in the areas of skill enhancement, job satisfaction and career development.

In order to arrive at a clearer understanding of the implications of the new technologies it is vitally important to build up a research base which assesses the actual changes taking place in those organisations where the technology is either in place or in the process of being introduced. It is also essential to assess the impact of the technology on particular groups of workers and specific aspects of their job situations.

This report concerns the training requirements of women workers arising from the introduction of new technology in the services sector of the Irish economy. The report comprises an analysis of the place of women workers in the services sector, a number of case studies of key enterprises within the services sector and an assessment of the training available for women workers in both the private and public sectors.

The services sector is of enormous importance to the Irish economy and it is the area of the economy in which the vast majority of women workers are concentrated. Therefore, the implications of new information technologies in this sector is of critical importance to the entire position of women within the "formal" economy of the Irish Republic. Women workers tend to be highly segregated into particular occupations and particular job categories. From this point of view, the assessment of the potential of new technologies to alter job content, affect the organisation of work, and open up career opportunities is of great significance to huge numbers of women workers.

1. WOMEN WORKERS IN THE IRISH ECONOMY

The economic role of women in the economy does not lend itself easily to statistical analysis. Traditionally, women played a central role in the agricultural economy but statistical records pay little attention to the place of women within the rural economy. With the increasing separation of work and home, the majority of women of working age have been engaged on "home duties", rearing and caring for large families. The rate of participation of women in the "formal economy" is extremely low in this country.

Barriers to women who desired to enter the formal economy have been, and continue to be, severe. Up until 1973, there existed a bar on married women working in the public sector, a practice which was also carried on by a significant number of private sector employers. Women were forced to retire on marriage and the effect of the "marriage bar" is still evident in the employment structure of many organisations today. Attitudes to women in work tended to be negative, particularly where married women were concerned and there were few child-care facilities available for those who wanted to participate in the formal workforce. Lack of child-care facilities continues to be a problem to this day and the narrow range of occupations into which women workers are crowded can also be seen as a disincentive to women's participation in the labour force.

There are just over 2 million people aged between 15 and 64 years, making up the working population of the Irish economy. Just under half of these are women. The predominant type of work in which women are engaged is "work in the home", accounting for 674,700 women in 1984. There has been a dramatic increase in the numbers of women participating in the labour force over recent years. Approximately one-third of the labour force is female and around one-third of women of working age are in the labour force. While there is a high rate of labour force participation among younger women, participation rates begin to fall off dramatically in the over 25 age group.

In 1984, a total of 385,900 women were part of the labour force, representing 29.4 per cent of the total. Thirteen years earlier, in 1971, women accounted for 25.7 per cent of the labour force. However, the annual average increase in the female labour force has been about twice that of the labour force as a whole, over this same period (table 1, page 46).

A more significant increase in the participation rate among women in the workforce can be seen among married women. In 1984, there were 133,100 married women in the labour force compared to a total of 39,200 in 1971. So, while married women made up 13.6 per cent of the female labour force in 1971, they accounted for 34.5 per cent of the female labour force in 1984. This increasing participation rate among married women can be accounted for by a range of factors including the lifting of the marriage bar, the trend towards smaller families and changing attitudes. Overall, the majority of women in the workforce are young and

there exists a strong tendency for women to leave the formal economy, either on marriage or, increasingly, following the birth of their first child.

- A decade or more ago, many women tended to drop out of the labour force on marriage. Now, the tendency is for women to drop out of the labour force, at least in a full-time capacity, during the child-rearing period, with in many cases a subsequent re-entry[1].

Activity rates among women workers are crucially affected by the number and ages of their dependent children with a clear trend towards fewer women working as the number of dependent children increases. Recent statistical reports show a trend in the levelling off of female labour force participation rates both among married and single women, with some possible indicators of an actual decrease as employment levels are being reduced in both the public and private sectors (table 2, page 46).

This table shows the pattern of female participation in the labour force and the particular significance of the increase in participation rates among married women in the workforce. The recent trend towards a levelling out of the growth rate can be seen on these graphs.

1.1 Where women work

There have been significant changes in the composition of the female workforce since the beginning of the 1970s. The vast majority of women workers, three-quarters of the total (76 per cent), are employed in the services sector. It is the services sector which has accounted for the majority of the growth in female employment since the early 1970s. The manufacturing sector employs 17 per cent of all women workers, while the agricultural sector employs the other 7 per cent. Within the manufacturing sector, about one-third of women are in the textiles, clothing, footwear and leather industries (table 3, page 47).

A more detailed analysis of the employment structure of women workers shows a high level of segregation of women workers into particular areas of the economy and within those, in particular kinds of occupations. The most intense occupational and sectoral segregation of women workers is evident in the services industries, where there are occupations tending to be all-female in their composition. The impact of occupational and sectoral segregation taken together results in a situation where women workers tend to be trapped into a very narrow area of the formal economy, where skill levels and wage levels are low.

---

1 John Blackwell. *Women in the labour force.*

Some of the features of the horizontal or sectoral segregation of women workers can be seen by looking at the proportion of women crowded into particular sectors:

Sector	Percentage of women workers
Textiles/clothing/footwear/leather	53
Retail distribution	47-64
Insurance/finance/business services	49
Primary education	75
Hospitals	77
Hotels	56
Restaurants/cafes	68
Hairdressing, etc	82

To get a clearer picture of the degree of segregation of women workers within the labour force, it is critical to examine not just where women work, but also the occupations where women workers are concentrated. Once again, it emerges from the statistical data that the crowding of women into a narrow range of occupations is the most dramatic in the services sector. It should also be stated that the impact of such segregation is particularly marked in the private services sector, as it is characterised by particularly low-wage levels and unattractive working conditions. The level of trade unionisation tends to be low in these areas of the economy, and the high level of segregation means that equality legislation has little impact on either wages and working conditions (successful equality claims can, for the most part, only be brought where both men and women are employed).

The following figures demonstrate the dimensions of occupational segregation:

Occupation	Percentage of women workers
Textile/clothing workers	61
Telephone/other operators	73
Clerical workers	72
Shop assistants	54
Service workers	55
Teachers	62
Nurses	89

Service workers, in this context, refers to waiters and waitresses, maids and related workers, barbers and hairdressers, and house and office cleaners. In each of these categories, women made up 80 per cent or more of the labour force. In the occupa-

tional category, clerical workers, sex segregation is at its most extreme; typists, for example, are 98 per cent female. The overall result of this kind of segregation is that women workers are concentrated into those low-skilled, low-paid occupations, many of which are vulnerable to the process of rationalisation taking place within both the private and public services sectors.

There is no indication that segregation of women workers has become less marked over the past decade. Taking the clerical work example, where segregation is so intense, 28 per cent of all women workers were in clerical occupations in 1984 compared to 23 per cent in 1971. This shows an increased proportion of women workers in those occupations with high segregation levels and where the impact of new information technologies is likely to be felt most strongly.

2. WOMEN WORKERS IN THE SERVICES SECTOR

Section 1 has indicated the importance of the services sector as a source of employment for women workers in this country. In this section, the structure of female employment in the services sector is explored, placing particular emphasis on the place of women workers in the occupational hierarchy. This forms a critical background to the analysis of the case studies presented in Section 3.

There are 257,500 women working in the services sector of the Irish economy. This accounts for 76 per cent of all women workers. The services sector comprises wholesale and retail distribution, insurance, finance and business services, transport communications and storage, public administration and defence, professional services, personal services and recreational services. Table 4 (page 47) shows the significance of each of these subsectors for women workers.

The majority of women employed in the professional services category are either teachers or nurses. Within all other areas of service employment, women are concentrated at the lowest levels of the occupational hierarchy. A survey of the structure of employment and earnings in retail and wholesale distribution and the banking sector gives a clear picture of the place of women workers in these important areas of female employment. Very few women are employed in the senior grades as the following data indicate:

Sector	Executives and managers (percentage of female)
Industry	3
Distributive trade	7
Banks	7

Within the public sector, which is another key area of female employment, women also find themselves in the lower strata of the workforce. The top four grades within the civil service comprise less than 3 per cent women workers, whereas the bottom grade of the hierarchy comprises 83.5 per cent women workers (table 5, page 47).

A similar pattern emerges if female employment in the civil service is analysed on the basis of occupational groups. Less than 8 per cent of women are employed in the professional category whereas women workers make up over 99 per cent of all typists in the civil service (table 6, page 48).

The same pattern emerges when other areas of service employment are examined. Within the area of transport and communications employment, for example, women are severely under-represented in all job categories other than telephone, telegraph and radio operators. Once again, we see that 98 per cent of the typists are women while 66 per cent of all clerical workers are female. Within the retail sector women workers are over-represented in the shop assistant and bar staff category and under-represented in all other job categories. Finally, within the private services area, women workers are mainly employed as domestic servants, waitresses, cleaners and hairdressers. Women do, however, make up nearly half (42.3 per cent) of the managers and proprietors in the personal services sector, indicating their importance among shop-owners in particular. Within the professional services category, teaching, nursing and other health-care occupations are the predominate areas of employment.

The preceding summary gives an overview of the position of women workers within the Irish economy and in the services sector in particular. It provides the context within which the case studies can be assessed, as they have been selected in order to represent certain key areas of female employment in services.

There is no detailed research available, as yet, on the extent to which new information technologies have been diffused throughout the services sector of the economy. It would seem that the banking, insurance and business services sector are the most advanced areas in which new technologies have been introduced on a large scale. The public sector is probably the next most important area from the point of view of the use of new information technologies. It is also likely that certain specialised areas of the personal services sector would also be using information technology extensively, for example, those in the travel trade.

Despite the lack of data on the extent of the diffusion of the new technologies, it would seem certain that women workers in the Irish economy are concentrated in the labour-intensive and routinised occupations within the services economy and are likely to suffer from the labour-reducing effects of new technologies. New technologies may lead to reduced labour demand in certain areas and increased labour demand in others, and it is possible that these effects may balance out across the workforce. But, in the case of women workers, it is unlikely that any overall balancing effect will be felt within those job categories where women workers are so intensely concentrated. These and other issues will be examined in the detailed case studies presented in the next section of this report.

3. CASE STUDIES

This section of the report comprises six case studies. Four of these are of organisations within the services sector of the economy where new information technologies have been or are about to be introduced on an extensive scale. The other two case studies focus on two organisations directly concerned with providing training facilities, concentrating on training programmes particularly associated with new technology.

Case studies have been selected in order to provide a picture of the kind of training programmes and career development opportunities provided for women workers as part of the process of introduction of new information technologies. The four service enterprises selected have been chosen to represent key areas of female employment within the services industry, both in the private and public spheres. The case studies cover a banking organisation, a retail organisation, a major public utility and a local government agency. All of these organisations are major employers of female workers and in each case the introduction of new technology affects not just the organisation of work and job content, but also the nature of the service available to the consumer.

Each of these four studies deals with a large service organisation and together employ over 20,000 workers, the vast majority of whom are female. There are, of course, many smaller scale and diverse organisations within the services industry where the introduction of new technologies follows different paths. The analysis of the introduction of new technology within the case-study organisations is not intended to be interpreted as applying to the entire service sector. Rather, the intention is that the cases will reveal many of the important issues arising for women workers as new technology is introduced. In addition, the scale of the organisations selected for the case studies means that training programmes are likely to be more systematic than maybe the case in smaller organisations where resources are more limited.

3.1 Case study 1. The banking sector

This case study looks at the introduction of new information technologies into one of the largest commercial banks in the Irish economy: the Bank of Ireland. The banking sector is one of the key areas within the services sector where new information technologies have been introduced on an extensive scale.

Information technologies have substantially transformed the organisation of work within the bank and also the nature of customer services. Internally, electronic-based technology has meant a significant reduction in the amount of paperwork involved in providing a banking service; a rationalisation of the entire data storage, processing and retrieval systems; and the development of a system of electronic funds transfer.

The introduction of new technologies within the banking sector has coincided with an expansion and diversification of

banking activities. Part of this growth is accounted for by the increasing proportion of the adult population holding a bank account. But expansion has also occurred as a result of the range of services offered to the individual customer and also through the development of specialised services such as home loans and corporate financial services. Due to these factors, the Bank of Ireland was itself undergoing a period of significant change and expansion concurrent with the introduction of new technologies. This makes it difficult to isolate the impact of the technology from the impact of other factors of change, all acting simultaneously on the structure and organisation of banking.

There is little doubt, however, that new technologies have enabled the banks to provide a more diverse and extensive range of services without increasing the overall level of employment. Conversely, if the banking sector had not been engaged in a process of development and expansion, then new technologies would have led to a reduced level of employment. It is also true to say that the diffusion of electronic-based technologies throughout the financial sector has, at a wider level, allowed for a breakdown in the traditional compartmentalisation of financial services. The Bank of Ireland itself, in addition to opening up an investment bank and extended its range of retail banking services, has bought into both the insurance business and the building society.

3.1.1 Information technologies in banking

The range of new technologies applied within the banking sector in Ireland is extensive. The most important aspect of this technological change has been the streamlining of "back-office" activities involving the centralisation and processing of all banking information. However, computerisation of banking records is not a recent phenomenon. What has been made possible by the spread of micro-electronic-based technologies within banking is an "integrated office system". This system involves a wide diffusion of computer terminals and word processing facilities linked to a mainframe computer. Terminals comprise screens, keyboards, magnetic strip readers and automatic note dispensers.

New information technologies show their greatest potential where there are routinised administrative tasks to be automated. This is so in the banking sector where simple routine tasks, such as altering names and addresses, ordering cheque books, inter-bank correspondence and updating customer accounts have all been subject to automation. Traditionally, banking has been a labour-intensive activity. The introduction of mainframe computers increased efficiency and also reduced storage space. But it is only with the rapid diffusion of micro-electronic technologies that decentralised access to a centralised information processing system becomes possible.

The strongest impact of the new technologies is evident in the "retail" banking sector. It is the very nature of the retail banking sector with its high-volume, low-value transactions which makes it particularly amenable to the rapid diffusion of information technologies. The "wholesale" banking sector, on the other hand, continues to be based more on analysis and research, backed up by close personal contact and knowledge of individual clients in contrast to the fast, efficient almost routine transaction of the retail sector. For this reason, although new technologies are a critical aid to the wholesale sector, they have not brought about such a transformation in the methods and organisation of its work. The following pages summarise the main areas of technological development and their areas of application within the banking sector.

Automated Clearing-House (ACH). This is a computer-based facility used to process payment orders in machine-readable form. The ACH handles recurring payments initiated in large volumes. ACH transactions parallel cheque-cashing operations. Instructions to transfer funds are held on magnetic tape, rather than on the cheques themselves, as was previously the case. The need for the physical movement of large volumes of paper (cheques) is substantially reduced. The primary function of the ACH is to process inter-bank transactions, but it is also used to process inter-branch transactions within the same banking group.

Automated Teller Machine (ATM). These machines are the most obvious application of new information technologies to the banking customer. ATMs are used to process a wide variety of customer-initiated transactions such as deposits, withdrawals, bill payments. The terminal completes many of the functions traditionally executed by the bank teller. ATMs are activited by access cards, based on personalised code numbers for each customer which must be punched in, along with the insertion of the card. Withdrawal of cash is accompanied then by a series of cheques to verify the identity of the customer and the availability of sufficient funds to cover each transaction. ATMs are usually found in the external walls of banks but could potentially be located in supermarkets, airports or other places where large numbers of customers converge. These machines can also be linked to the central computing facility of a particular bank, thus operating as an on-line service.

Cheque truncation. This refers to the termination of the paper document (the cheque) within the financial system prior to its receipt by the originator, i.e. issued cheques are no longer returned to the bank customer for record-keeping. Electronic information is substituted for the movement of actual paper/cheques and a print out of the different transactions would then be made available to the customer. In the same way, transfer of cash from one account to another would be electronically recorded thus no longer requiring the credit transfer/bank giro style verification. This means that an enormous amount of physical movement of cheques and other forms of paper records would no longer be necessary. This process is directly linked to the development of the Automated Clearing-House system. However, it depends on the diffusion of information technologies throughout the banking sector as many of the transactions automated through this system are inter-bank transactions. In the mean time, cheque truncation is applied to customer accounts.

Descriptive billing. This refers to the process by which the original invoices concerning a transaction are not stored but rather descriptive details are stored in electronic format. Here again, the effect is the substitution of paper records by electronic records.

Direct deposit. This involves payment of an amount due directly into a designated bank account through electronic funds transfer rather than a cheque sent to the payee. Bill payment can take place under this system through the direct transfer of funds from a customer's account to an organisation to which payment is due. This payment is then directly lodged to that organisation's account. This means that regular account transfers can be made without the need for individual authorisation in each case.

Electronic Funds Transfer (EFT). This term can be used to cover the various applications of electronic technology through the banking sector. More specifically EFT refers to a network of banks, retail organisations and other financial institutions operating an electronic system for the transfer of payments. The spread of information technology throughout the services sector is a prerequisite for a fully

developed system of EFT. In the mean time, EFT is becoming more and more sophisticated within the banking sector itself.

Credit authorisation/verification. This refers to an inquiry process initiated for the purposes of approving or denying credit. It can be used by a retailer to verify the credit status of a customer or by the financial sector itself to assess the credit rating of an actual or potential customer. In the United States, such systems are based on co-ordination between various subsectors of the financial services market. In this country such systems are internal to individual banking organisations. More up-to-date information on lost/stolen credit cards and cheque books is, however, being issued to the retail sector by the banking sector in a more co-ordinated manner.

3.1.2 Information technology in the Bank of Ireland

The Bank of Ireland has over 200 ATMs installed in its branches throughout the country. Most of these are located in the outside walls of bank branches. Within the bank's branches, there have also been a variety of different kinds of cash-handling equipment introduced: cash dispensers, encoding machines, note counters and foreign exchange calculators.

Virtually every office within the bank has a controller with a number of terminals attached. Terminals are being used for office administration and at counters to provide immediate access to customer account information. Word processors are in use for the preparation of routine letters to customers, reports and legal documents. Issuing of statements, wage and savings payments systems, bill payment and other forms of money transfer have been subjected to extensive automation. Descriptive billing is in use and this is envisaged as eventually leading to a fully established cheque truncation system.

Bank customers are issued with PASS cards alongside cheque books and cheque cards. These cards, together with a personal identification number, enable customers to access the ATMs. A substantial number of customers in addition use the ACCESS credit card, issued by the Bank of Ireland in conjunction with other banking groups world-wide. Resistance by customers and potential legal complications associated with electronically stored data have put restrictions on the full use of the potential of new information technologies. Future developments are seen as tied to the general spread of information technologies throughout the services sector of the economy.

3.1.3 Profile of the organisation

There are a total of 6,100 people employed by the Bank of Ireland, of whom 56 per cent are women. Up until 1 January 1974, women workers were obliged to resign on marriage. Among other factors, this has meant that female workers tend to concentrate into the lower strata of the bank's employment structure. In addition, there are a few hundred temporary bank assistants employed but these are limited to 7.5 per cent of the permanent staff (former bank officials account for over half of these). The following figure shows the employment structure of the Bank of Ireland, giving a breakdown of the percentage of male/female workers at each level:

Grade	Percentage of female
Scales 1 to 3	56
Senior bank official	78
Officer	47
Assistant manager	20
Manager	2
Total	56

The distribution of bank employees between the different grades has changed dramatically over the past five years. These are the years when information technologies were introduced on a widespread basis throughout the bank. One of the major reasons for this has been the substantial drop in annual recruitment into the bank over this same period. Recruitment levels fell as technology enabled the bank to offer an expanded range of services without increasing the size of its workforce. As a result of this situation, there has been little recruitment to the lower grades within the bank and, with promotion of existing staff, the employment structure has altered dramatically.

The following data shows the change in the distribution of bank employees in the various grades between 1982 and 1987:

Grade	1982	1987
Scales 1 to 3	37	10
Senior bank official	35	57
Officer	5	6
Assistant manager	13	15
Manager	10	12

Salary scales associated with the various grades were raised significantly as a result of an Agreement covering the introduction of new technologies within the bank. The details of this Agreement are presented below and it gives the details of salary scales as of November 1987:

Grade	Salary scale
Scale 1	8 340- 9 987
Scale 3	10 110-14 433
Senior bank official	10 059-18 201
Officer	13 521-19 188
Assistant manager	15 672-22 071
Manager	25 311-28 542

After ten years at the maximum of the scale, a senior bank official's salary is raised to 18,672 and, after 20 years at the maximum on the scale, it is raised to 19,137.

3.1.4 Changing job content

A further feature of the introduction of information technologies within the Bank of Ireland has been the shift in the distribution of employees away from the back-office functions and towards direct customer services. This has been possible as a result of the faster and more efficient processing of information which was the primary function of the "back-office". The following data shows the changes in the overall job content of the bank's activities during the same period, 1982 to 1987.

Job content	Pre-1982 (%)	1987 (%)
Direct customer contact	47	73
Back-office function	53	27

This move away from bank-office functions and towards direct customer service is the major aspect of the change in job content arising from the introduction of new technologies. In addition, the description of the new equipment in use in the bank (see above) gives an indication of the changing job content of those dealing with customers. Transactions are entered at terminals which link through to the mainframe bank computer. Specialised services are offered through direct interviews through which customer requests are specified and then subsequently processed. New equipment is used in all the routine functions associated with the servicing of customers' accounts, including mailing, letters, updating of statements, issuing of cheque books, etc.

3.1.5 Recruitment and promotion issues

The management of the Bank of Ireland is of the opinion that a disproportionately small percentage of employees is currently working in the lower grades. This, they state, is the result of the "automatic promotion" to which any person coming into the bank is entitled.

Effectively this system of promotion implies that anybody employed by the bank can eventually move to a salary of 19,137, i.e. at the top of the senior bank official grade after a period of 20 years' service. The management estimates that the real cost to the bank of each employee on a salary of 19,137 is in fact 28,500. The bank is currently interested in reducing staff costs and is hoping to achieve this through voluntary early retirement and the restructuring of grades.

In 1988, they hope to take in about 500 to 600 new employees at the lower grades. This is a relatively high rate of recruitment compared to the average of 100-200 over the past five years, most of whom were recruited to replace those who had left for a variety of reasons. This new, higher planned recruitment rate is not the result of an intention to increase overall staffing levels, but rather to restructure employment in favour of the lower grades. It is intended that voluntary retirement will enable this process to take place without increasing the overall level of employment.

3.1.6 New Technology Agreement

The introduction of new information technologies into the banking sector across the Irish economy was covered by a New Technology Agreement, covering the period 1982 to 1987. This agreement was negotiated between the Irish Banks Standing Committee (IBSC), a co-ordinating body between the main associated or commercial banks and the Irish Bank Official Association (IBOA) which represents around 15,000 bank employees in the commercial banking sector.

The IBOA is in the unique position of representing bank employees in the four major associated banking groups and is thus in a strong position to achieve significant improvements in both pay and working conditions among bank workers. The IBOA has negotiated substantial increases in the salary levels of bank employees over the past 20 years, resulting in a significant improvement in the relative position of bank employees vis-à-vis other service workers. The IBOA is not affiliated to the Irish Congress of Trades and Unions, which is the national federation of trade union organisations within the country. In that sense, its negotiating position is relatively independent of developments in wage bargaining in other areas of the economy. Due to the scale of the organisation and its role as representative of the majority of workers in a key financial sector, this has not resulted in a weakening of its negotiating position.

The position taken by the IBOA throughout the negotiations concerning new technology started from a separation of ongoing salary claims from any agreement on new technology. The IBOA rejected the pressure from the banking group to agree to technological change for the sake of a salary agreement. The IBOA demanded and eventually received from each of the banking organisations a statement on the type of technological change envisaged for the period of the Agreement. Once these details were received, a number of points of contention between the IBOA and the IBSC arose, forming the basis of three demands on the part of the IBOA:

- A review of the process of introduction of new technologies after three years.
- The creation of new officer grade within the banks.
- An end to the right on the part of management to transfer employees.

During the negotiations which followed, only the point on "regrading" was conceded by the IBSC, resulting in the promotion of approximately 700 bank officials across the four banking groups. The other two demads were rejected, as management argued that a three years' review period would be impractical. The Agreement itself eventually ran for five years. No agreement on the "right to transfer" was agreed but additional agreement was secured on the issue of part-time and temporary staff under which staff on short-term contracts were limited to 7.5 per cent of permanent staff. Increased annual leave was negotiated as well as an early retirement scheme. In conclusion, a written undertaking was given by the four banking groups that there would be no redundancies arising from the introduction of new technologies.

The final agreement on salaries emanating this Agreement, contained the following:

- 2 per cent from 1 December 1981;
- 6 per cent from 1 March 1982;
- 14 per cent from 30 april 1982;
- 5 per cent from 1 October 1982;
- 2.5 per cent from 1 August 1983;
- 2.5 per cent from 1 November 1984;

- 2.5 per cent from 1 February 1986;
- lump-sum payment of 5 per cent at the end of November 1981;
- increased allowances;
- revised overtime schedules;
- adjustment to *overscale* salaries.

It is clear from the above that very substantial improvements in salary levels were achieved by the IBOA in the negotiations concerning new technology. Despite their intention to separate salary issues from issues of technological change, the New Technology Agreement put its emphasis almost entirely on salary level compensation, in return for a wide acceptance of the introduction of new technology. Although the IBOA received "letters of intent" from each of the banking groups outlining technologies to be introduced, these were very general thus giving bank management a relatively free hand for the period of the Agreement. However, the IBOA were under pressure from their own members to accept technological change as in many instances new technologies were seen as holding out the potential to reduce some of the more routinised, tedious aspects of banking activity.

In finalising this Agreement, the Labour Court was involved in making a ruling on areas of contention, primarily the issue of future technological change which had been outlined by each of the banking groups in written letters to the IBOA. In an interesting comment on the negotiations, the Labour Court also emphasised the need to cover issues such as career development and job satisfaction.

The Labour Court ruling was issued in April 1982. It included the following statements:

- The court recommends that the largely speculative matters ... be eliminated from the Bank's letters of intent. In this event, the necessity for a review of the Agreement after three years should be eliminated ...
- With regard to the future, it seems to the court that as further developments occur, it would be a grave mistake if the Parties were to define the benefits to staff in purely cash terms ... The Association and the banks should consider such elements as job enrichment, career structure and other potential areas of advance and development which may be open to bank officials deriving from change and extension of the banking service made possible by these new techniques[2].

The New Technology Agreement outlined above covered the commercial banking sector up until April 1987. The expiration of the Agreement meant that a new round of negotiations took place, but of a very different kind to the 1982 negotiations. This time, the IBSC looked for a procedural agreement which would establish a method of negotiation where any disputes arose concerning technological change. This would then eliminate the necessity to specify the content of technological change and would reduce negotiations only to those areas where disputes arose. It would also ensure that work would continue while negotiations were in process, an important break-through from the point of view of the management.

Once again, the negotiations were unresolved and eventually were referred to a tribunal. This new agreement stated that there would be no compulsory redundancies for a period of three years and that there would also be no reduction in the number of "ranked posts": manager, assis-

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2 Labour Court Recommendation No. 7068, April 1982.

tant manager and officer grades. The major elements of the Agreement involved the right of the bank management to carry through the process of technological change in return for increases in salary levels (applicable to a 17-month period) and increased allowances. In summary, the agreement consisted of the following:

- 5 per cent salary increase from December 1986.
- 2 per cent salary increase from November 1987.
- increased allowances.
- Ongoing changes (such as adjustments of products, machinery and updating of technology) can be implemented during the period of the Agreement.
- Bank management to supply a written list of proposed significant planned changes.
- Unforeseen significant changes which may be a source of dispute will be resolved under special negotiating procedures, during which time work based on such change will proceed. Disputes referred to arbitration will be resolved through the binding recommendation of an arbitrator.
- Special health facilities to be provided for female staff, covering cervical smear-testing and breast-cancer screening. Eye tests to be provided for all employees at the bank's expense. Pregnant women to be transferred from VDUs to suitable alternative work in the same location.

It is clear from the above that both Agreements concerning new technologies have brought improved pay and conditions for bank employees. The most significant changes have been in the area of pay.

These Agreements have enabled bank management to introduce far-reaching and wide-ranging technological changes. Neither of these Agreements dealt with the issue of training. The question of career development is indirectly affected by such issues as the retention of "ranked posts" and the absence of compulsory redundancies.

Training is handled at the level of the individual banking organisation through individual training and personnel departments. As such, the IBOA has no direct involvement in negotiating issues that arise concerning training. In the area of promotion, the IBOA is involved in the issue of employment structure within the banking sector as a whole and this directly affects promotional opportunities within each of the banking organisations.

3.1.7 Training and career development

Major training programmes concerning the introduction of new technologies were carried out by the Bank of Ireland during the period 1982 to 1984, immediately following the first New Technology Agreement. During 1982, between 1.5 per cent and 2 per cent of staff costs were devoted to training, when the bulk of the training programmes involved the introduction of new technologies. By 1987, the training budget accounted for approximately 4 per cent of staff costs but the major programmes carried out in 1987 did not involve new technologies but rather concerned:

- service equality;
- service techniques;
- personnel management.

The Bank of Ireland has a policy of recruitment at the lowest grades and internal promotion to fill each of its various functions. This policy means that there is a significant prospect for promotion for any bank employee. In fact "automatic promotion" takes place up to the level of senior

bank official, depending on length of service. After that point, promotion depends on job vacancies. As it was clear from the profile of the bank (see above) this policy has resulted in a redistribution of bank employees in favour of the middle and higher grades over the past few years, particularly when recruitment levels have been so low.

There is a certain amount of recruitment of specialised staff, primarily in the areas of data processing and corporate financial services. Here professional, experienced staff are recruited to a relatively high level in the grading structure. However, the majority of management posts are filled through the process of internal promotion which management believe contributes substantially to job satisfaction. The previous existence of a "marriage bar" or enforced retirement on marriage for women workers within the banks has contributed strongly to the crowding of women workers into the lower grades. Eligibility for promotion rests critically on experience and length of service. The "marriage bar" resulted in a situation in which women workers have not been able to build up sufficient experience. This situation has changed over the past 15 years, but its effects are still evident in the employment structure of the banks.

Selection for training is carried out by the individual branch manager at the level of the local branch. This system is tied to a process of annual staff assessment, whereby each member of staff fills out an assessment form which is signed by both the individual employee and his/her branch manager. This form contains a review of that employee's work performance over the year and also an outline of his/her career goals. Due to the fact that this assessment procedure involves the branch manager as well as the individual employee, it is likely that the statement of career goals would be made within the tradition and expectations of the bank.

Analysis of the assessment forms at both branch and central level is used for the planning and development of training programmes as well as the selection of staff for training purposes. Details on assessment forms are confidential to the individual staff member and his/her Branch manager. But the Training Department consults with branch managers in the planning of long-term training objectives.

3.1.8 Training and new technology

The primary aspect of the Bank of Ireland training policy during the 1982-84 period when significant new technologies were coming in involved the selection of a number of employees from each branch of the banking organisation for training. These employees were trained in the use of the new equipment and new methods of work organisation through intensive courses in a centralised Training Department. The newly trained workers then returned to their individual branches and trained other employees to use the new equipment and implement the new work methods.

The bank management believes that this system allowed for a combination of intensive training programmes with a system of adapting training to the local environment. In their view, such an approach to training achieved the most effective and efficient results while enabling the service to be maintained and the minimum amount of disruption to occur. Those selected to undergo the intensive training programme and subsequently train their colleagues were selected by branch managers, brought to the central Training Department in Dublin and given a working knowledge of the applications of information technologies within the branch structure.

Over 2,000 employees were trained under a formal training course during 1982-83, the peak year for the introduction of new technologies. Approximately 4,000 were

trained in general customer relations during 1987 (table 7, page 48).

During 1982-83, there were approximately 30 members of staff trained centrally who subsequently trained colleagues in local branches. Of these approximately 60 per cent were female. This form of training was organised on a project basis, covering specific aspects of the application of new technologies.

From this data, it is evident that female staff participate in formal internal training on a basis which is relatively proportionate to their numbers. Women workers make up a higher proportion of staff undergoing training in those grades where they are the most numerous, and a relatively smaller proportion of trainees in the higher grades where they are fewer in number. However, women trainees make up approximately 50 per cent of those being trained at senior bank official and officer grades, where women workers make up 78 per cent and 47 per cent respectively of the workers in these grades.

There are no official records of the numbers and grade composition of those attending external training courses. However, most of these involve training courses for higher management and it is likely that women make up only a small proportion of such trainees given their low numbers within the grading structure. It should also be pointed out that the training programmes involve the specific application of new technologies to particular areas of work and do *not* involve a deeper knowledge of the technology. Training stresses very much the direct application and use of the technology in carrying out routine tasks. Recent training programmes emphasise customer relations and personnel management and are not specifically oriented towards technology.

In addition, Personal Development Programmes are run for female assistant managers. These programmes were extended to female officers and senior bank officials in 1988. A further programme for assistant personal managers is also scheduled. Finally, equal opportunities workshops are run for the staff of the Training Centre and personnel managers.

The following data gives an indication of the numbers participating in training over the whole period from 1982 to 1987. The year 1982 is taken as the base year (when approximately 2,000 employees underwent formal training):

	82-83	83-84	84-85	85-86	86-87	87-88
Formal training index	100	109	91	116	119	c.200

3.1.9 Equal opportunities policy

The Bank of Ireland has an Equal Opportunities Programme based on a policy of equal opportunities for all employees regardless of sex, marital status, colour, creed or ethnic origin. This policy applies to recruitment, interviewing, staff evaluation and training and development. The bank commits itself to encouraging all staff, on an equal basis, to undertake development and training and to providing opportunities for staff to undertake jobs which have not traditionally been associated with their sex.

As regards the area of training and development this Equal Opportunities Programme states that nominations for training courses will reflect the equal development of skills of males and females, allocation of work and on-the-job training will not discriminate on the grounds of sex, and assumptions concerning domestic responsibilities will not be made. Training programmes will not discriminate on grounds of age, and course material, visual aids and literature used in training will portray that all jobs are done by both sexes.

The Bank of Ireland is the only private sector organisation to have appointed a full-time equality officer with responsibility for overseeing the implementation of the equality of opportunities programme. The programme does not commit the bank to any "positive discrimination" measures but rather to equal treatment within the existing organisational structures. Women workers have made considerable progress over recent years within the bank and training has played a critical role in this process. However, selection for training relies on the attitudes of individual branch managers, and specialised training is generally only available to management staff and women are severely under-represented within the management hierarchy of the bank.

It should also be noted that there is a limited amount of internal promotion and development within the bank, as in most other organisations, and therefore those at the lowest levels of the job hierarchy (mainly women) are likely to suffer from this rigidity in organisational structure In this sense, while the Equal Opportunities Programme is extremely important, it is unlikely to achieve a significantly more even distribution of women workers within the Bank of Ireland.

3.2 Case study 2. The Electric Supply Board

This second case study concerns one of the major public sector agencies within the economy. The Electricity Supply Board (ESB) is the public body responsible for the supply of electricity on a national basis. It is the only organisation legally allowed to supply electricity. The ESB operates on a commercial basis charging each household unit according to the amount of electricity consumed. Special rates operate for the commercial sector. Those employed by the ESB are public servants, sharing similar conditions with many other employees in the public sector.

The organisation itself is structured around two workforces: manual workers (both skilled and unskilled) who are engaged in the process of producing and supplying electricity, and administrative workers who are mainly involved in customer services and accounts. The diffusion of information technology within the ESB, which is currently in process, affects primarily the organisation of work in the administrative section. However, it also allows for maintenance and other services to be linked directly with information processed through local and central offices. The most important impact of microelectronic-based technology is that it reduces the amount of paper work and facilitates the processing of information concerning customer accounts and services. It also enables the internal organisation of the administrative functions to be streamlined and rationalised.

New information technologies are currently being introduced into the ESB on a large scale. Information concerning customer accounts, such as applications for electricity supply, overdue bills and payments to accounts will be entered on computer terminals and centrally processed, eliminating the need for extensive, tedious and time-consuming paper records. Here again, information technology provides the dual possibilities of centralised processing of information, combined with decentralised access and inputting. This central feature of the technology provides the basis for a fundamental reorganisation of work.

3.2.1 Profile of the organisation

The ESB employs 12,443 workers, the majority of whom are manual workers crossing a range of skill levels. Table 8 (page 49) gives a breakdown of ESB employees according to broad occupational categories, disaggregated by sex.

As can clearly be seen from this table, the vast majority (87 per cent) of ESB workers are male. Female workers are concentrated in the officer category which involves clerical and general administrative workers. By virtue of the service involved, a significant proportion of the employees are spread across the country, working in local generating stations and offices. The majority of the administrative staff is based in the Dublin area.

The crowding of women workers into the clerical and administrative sectors results in the majority of women workers on low-pay levels. Clerical workers and unskilled manual workers make up the vast majority of the lower-paid workers within the ESB. Only a tiny proportion of the technical staff and other manual workers are female: 99 per cent of engineering workers, 97 per cent of the technical staff and 96 per cent of all craft and general workers are male. In effect, the ESB is a highly segregated workplace, segregated on manual/non-manual lines and also on male/female lines.

A more detailed picture of the place of women workers within the organisation emerges from table 9 (page 49) which shows clearly the areas of work into which women workers are concentrated, primari-

ly canteen work, clerical work, cleaning, demonstrating, drawing, office work and public relations. By far the greatest number of women workers are clerical workers, cleaners and executive administrative workers. Blue-collar, manual work, both skilled and unskilled, is almost exclusively male. To achieve a deeper picture of the position of women workers within the ESB, it is necessary to look at the position of women workers within the office administration sector as a whole.

Table 10 (page 50) shows the number of women workers within the administrative workforce of the ESB in May 1985, broken down on a single/married basis. It also shows the progressively fewer women workers in the various levels of the administration hierarchy. There are, in fact, five additional levels to the administration hierarchy, comprising senior management, within which there are no women workers. The largest number of women workers are at the executive officer level, encompassing 89 women in all, of whom the majority (55), are single.

Within the occupational category engineers, which represents one of the most skilled occupations within the ESB workforce, 99 per cent of the workers are male. Of the six female engineers out of a total of 771, four were single and two were married.

Clearly emerging from the data is a picture of a highly segregated workforce within one of the largest public sector agencies. Women workers are confined to the office area, or other areas of traditional "womens' work." In all, women account for about 15 per cent of the total workforce and are concentrated into areas of the organisation where the introduction of new technologies will have its greatest impact on jobs and work organisation.

The workforce of the ESB is highly organised. Due to the wide range of manual and non-manual work within the organisation, trade union representation is complex. There are 18 unions involved and their activities are co-ordinated through the ESB Group of Unions. Voting strength is organised on the basis of size of membership. There is also a Joint Industrial Council made up of representatives of both management and workers' organisations to which issues of dispute are referred as a "court of last resort". The most important union from the point of view of women workers is the ESBOA, i.e. the ESB Officers' Association which represents workers in the administrative sector. This union is extremely active within the organisation as a whole, and places much of its emphasis on the position and needs of women workers within the organisation. There is also an equality officer responsible for ensuring the equal treatment of women and men workers within the organisation.

3.2.2 Recruitment

Recruitment into the ESB takes place at a number of levels: clerical officer, executive officer, engineer, other crafts, apprentices and unskilled manual workers. Executive officers require an Honours Leaving Certificate (highest national second-level qualification) or a third-level degree. Engineers and other craftworkers enter the organisation with their professional and craft qualifications. Clerical officers, apprentices and other unskilled manual workers enter into the organisation with varying kinds of second-level educational achievements. Recruitment levels have been falling over the past five years and it is envisaged that they will fall still further over the next five years. In fact, the ESB five-year strategic plan envisages a workforce of 10,000 by the year 1992. This represents a fall in employment of 2,443, or about 20 per cent, from the current level of 12,443.

This dramatic reduction in employment levels will be brought about by limiting

recruitment to the absolute minimum and through initiating a programme of voluntary redundancies and early retirement. The underlying reasons for this drop in employment include the current government policy aimed at reducing public sector employment combined with the impact of new technologies on labour requirements.

3.2.3 New Technology Agreement

A procedural agreement governing the introduction of new information technologies was signed by the ESB management and the ESB Group of Unions on 7 May 1987. This agreement followed a dispute concerning the annual wage agreement and technological change. The wage dispute was settled after a two-day strike and an agreement covering this and the procedures to be pursued in the event of disputes arising due to technological change were agreed. In addition, ESB workers received concessionary electricity supplies.

The ESB management and the unions stated their commitment to: "peaceful and speedy implementation of change in systems, procedures, work methods and equipment in the interest of promoting the best modern electricity utility standards."[3]

The agreement stated that existing disputes concerning "change" would be the subject of further negotiations. Under the agreement a "high-level joint working party" was established which was to have the responsibility of developing machinery to ensure speedy and peaceful implementation of change. Disputes concerning change were to be referred to the Joint Industrial Council who would then make a recommendation. If either party were to reject such a recommendation, a "cooling-off period" of 30 days was to be observed, during which period negotiations would continue.

In addition to this general agreement between the Group of Unions and the ESB management, a Code of Practice between the ESBOA and the ESB concerning the introduction of new technology was signed. This Code of Practice is of particular relevance to women employees, given their position within the organisation and the fact that the large majority of women workers are represented by the ESBOA.

The Code of Practice states that, while the ESB is entitled to apply the best in information systems for the benefit of its customers, the management will give full consideration to the concerns of the union. Management undertook to discuss with the union prior to any decision to commit resources to system development. The Code of Practice states that its aim is to ensure "timely consultation, eliminate delay and achieve implementation of systems on target". Consequently, management commits itself to provide the "fullest possible information" to the ESBOA and to take into account the union's views.

Under the terms of the Code of Practice, ESB management guaranteed security of employment to all staff affected by the introduction of new information systems while the union accepted possible changes in work groups, work stations and practices. Management also agreed to consult with the union concerning the timeframe for introducing new systems, as well as plans for training and retraining staff.

ESB management assured that no employee would be compelled to relocate family or home and that there would be no

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3 Agreement between ESB and ESB Group of Unions and ATGWU, 7 May 1987.

salary or grade reductions. The union assured full co-operation with the introduction of information systems where this was done under the terms of the Code. Disputes arising would be referred to the Industrial Council. In the event of a recommendation of the Industrial Council being rejected, a "cooling-off period" of 30 days would be observed during which time negotiations would proceed.

The emphasis under both of these agreements is on the procedures governing technological or other change within the organisation. The ESBOA had originally submitted a claim for an "across the board" payment and safeguards for the introduction of new technology. ESB management has consistently refused any "ongoing payment" and only sees "lump-sum" payments as having a possible application to the process of technological change. ESB management argued that the concession of electricity units to staff represented an "ongoing payment" for all change. However, this concession was secured without the union accepting specific changes. At present the Joint Working Party, agreed under the 7 May 1987 Agreement, is meeting regularly with management as well as representatives from the various unions.

3.2.4 Training policy and practice

The ESB training unit operates three main categories of training for its employees:

(a) *General training*. This category of training encompasses social and management skills, supervisory and interviewing skills. The objective of this area of training is to provide employees with a range of skills used in dealing with customers and in the lower management levels of the organisation.

(b) *Adult training*. This category of training covers a wide range of skilled manual training for craftworkers within the ESB. It involves formal craft skills as well as supervisory training.

(c) *Managerial training*. This area of training involves middle and top management and covers business and organisational skills.

General training involves both male and female employees while the latter two training categories have a male:female ratio of about 20:1. This pattern of participation reflects and reinforces the high level of segregation apparent in the structural analysis of the workforce.

The vast majority of training is carried out on the job and involves the familiarisation of staff with particular aspects of the job. Under the "adult training" system young male employees are taken in as apprentices and undergo full-craft training within the organisation.

Once trained, craftworkers receive little further training during the course of their employment, with the exception of a small minority who receive some training for supervisory and management positions.

Top-level management training is the only area of training where external courses are used. The majority of this kind of training is seconded out of the organisation. The ESB also offers incentives for staff who pursue additional educational opportunities outside the organisation. This includes, for example, financial assistance for those who pursue a university degree.

Selection for training programmes is the responsibility of regional managers. Only in the area of management training is there any element of self-selection. As a result, in-house training is shaped by the attitudes of existing management, towards both potential participants and the content of training programmes. Consequently, in-house training is viewed in a negative light

by the ESBOA who are highly critical of the selection procedures and the lack of information on upcoming training courses. They also argue that training emphasises management skills over technical skills.

3.2.5 Training and new technology

The recent phase in the introduction of new electronic-based technologies into the ESB has involved a widespread programme designed to familiarise staff with new equipment and new work systems. Here again, the emphasis has been, on on-the-job training, involving virtually every member of the staff. Such training consists of showing each worker how routine tasks will now be performed on the new equipment. To a large extent, this involves the process of inputting information using a keyboard and screen, rather than recording information on paper and filing.

Training in the use of the new equipment is minimal and involves familiarisation with a routine process of storing and handling information. Following initial demonstrations of the processes involved, repeated use over a relatively short period of time completes the training. Efficient handling of the new information systems, from the perspective of ESB management, does not require a knowledge of the technical processes involved, but simply an ability to feed in and extract information from those systems.

In this sense, the tasks involved are not more complex when transferred from paper to machine, although the introduction of a computerised system allows for greater ease and efficiency in manipulating and updating information. As such, training is not intensive. It is short-term on-the-job training allowing the organisation to computerise fully its information systems without any significant alteration in the overall organisation of work. This is not to underestimate the importance of new technologies in the rationalisation of an organisation like the ESB, but simply to highlight the fact that *employees do not necessarily access new skills as a result of the introduction and use of such technologies*. It is precisely the related processes of decentralisation and centralisation, which micro-electronic technologies have brought into the information processing world, which underly this reality and are significant. Micro-electronic technology enables information to be fed into a centralised system from a decentralised work station, while at the same time allowing each employee using the system to manipulate that information at each decentralised work station.

The Information Systems Department of the ESB either buys in or designs its own software. In effect, the traditional manual system is transferred into a computer programme. The software tends to be "user-friendly" as in many cases it is designed specifically for the specific needs of the organisation. About 100 employees are involved in the development and refinement of these information systems and this is the one area of the organisation where new technology involves the employment of highly trained staff.

There are also traditional "keypunch operators" who are employed on the clerical officer grade and whose work relates to the traditional inputting of information in the early computer systems. Much of their work will now be carried out under the new systems by staff in all the various departments, where the new technology is in use.

3.2.6 Equal opportunities and training

The ESB has an Equality of Opportunity Programme. This programme covers the implementation of equality legislation and policies for promotion of equality of opportunity within the organisation, monitoring such things as employees' sex or marital status in relation to pay, recruitment, training and promotion. The ESB

defines itself as "fully committed to the principle of equality of opportunity". Specific initiatives have been taken for the implementation of this Equality of Opportunity Programme, some of which affect training, recruitment and career development.

Two female senior interviewers have been included in the ESB team of professional recruitment staff, and recruitment literature is designed to ensure that it contains no explicit gender bias. Special training for interviewers has been undertaken to promote a deeper awareness of the organisation's policy on equality of opportunity. However, it has been found that the traditional male image of many of the job categories within the organisation, compounded by attitudes and educational patterns within the society as a whole, means that there are few female applicants for traditional male jobs.

In the area of training, the Equality of Opportunity Programme has resulted in a number of recent initiatives. A female training officer has been appointed, a review of training programmes has been undertaken and more emphasis has been placed on co-training of men and women workers. In addition, a commitment has been made to produce regular information on the relative numbers of male and female workers attending all courses. Such data are not yet available.

Career development opportunities have been promoted with greater emphasis placed on the possible career paths for women workers in the lower grades of the organisation and in traditionally male-dominated work areas. A key area here is the opportunity for female clerical workers to move within the administrative hierarchy. The female participation rate in the Executive Officer Development Programme has also shown a significant increase. In 1981, only 7 per cent of those participating in this programme were women workers. By 1985, 27 per cent of those participating were women.

As part of the Code of Practice between the ESB and the ESBOA concerning the introduction of new information systems, the ESB management agreed to consult the union concerning "plans for training and retraining of staff" and also "proposals for reassignment, retraining, etc.". The ESBOA is particularly concerned with the position of women workers within the ESB and has played a key role in negotiations concerning a new training programme for women workers arising from the introduction of new technologies. This involves a five-year programme under which ten women are trained each year (with a commitment to place five) in four work areas traditionally dominated by men. These are information systems, apprenticeships, technologists and engineers. This agreement appears to be the one effective mechanism for training women for non-traditional occupations. *Without such agreements, general statements on equality of opportunity rarely translate into real changes in the position and opportunities for women workers* given the high level of segregation within the ESB. This kind of agreement is particularly crucial, although the numbers involved are still very low.

3.3 Case study 3. The retail sector

This third case study concerns the diffusion of new information technologies within the retail sector of the Irish economy. It focuses on the larger retail units, involved in the clothing and food sectors. Information technologies within this sector of the economy have brought about significant changes in the equipment used to record sales (traditional cash register) and also in the internal administration of organisations engaged in retail activity. Information technology has the potential for a wider impact in this sector through the link-up of sales and stores information. This kind of technological development has not yet come into operation in the major clothing and food outlets in this economy.

Micro-electronic technology has transformed the traditional cash register into a computer terminal, which has the capacity to act as a stand-alone system or to link-up to a centralised information system. Used as a "stand-alone" system, the new Electronic Point of Sale Terminals (EPOS) provide detailed information on purchases and also record information on the method of payment. The more sophisticated systems do not require purchase information to be keyed in, but are capable of reading a bar code off each product or product label as these are passed across an "electronic eye".

Such systems allow for a significant increase in the speed by which a large volume of product sales can be recorded, for example, in a modern supermarket. The machine also gives a very detailed record of each product purchased for both the customer and the retail organisation itself. This kind of data can be used for purposes of developing sales and purchasing strategies and also for purposes of stock-taking. Technically, it is possible to use a common information system to record purchases and to administer stores, but such applications are not in full use in this economy as yet.

Rationalisation within the retail sector of the Irish economy has been intensive over the past decade. The primary aspect of such rationalisation has been a sharp reduction in the labour-intensity of retail activities. Within the retail sector as a whole, two inter-related trends can be identified. On the one hand, there is a trend towards larger units, chains of outlets and a more "self-service" style operation, particularly in food and clothing. On the other hand, there is the emergence of smaller, more specialised retail activities catering for specific segments of the market-place. This case study focuses on the larger self-service style outlets. It is in retail outlets that the reduction in the use of labour is the most marked.

Floor staff in clothing department stores and supermarket outlets are few in number and are increasingly confined to payment points. Customers tend to be left to their own devices in finding and selecting items for purchase. Once the choice has been made, customers proceed to the payment point and carry out their transactions. Less and less contact with individual staff members takes place. In some cases, demonstrators are brought in by manufacturers or distributors, to draw attention to a particular product or product line, and retail stores facilitate their activities. The more traditional outlets still emphasise direct staff contact to encourage sales, but these are increasingly a minority.

Display and packaging take on greater importance with the trend towards self-service. It is also vital that accurate sales information is available to each organisation, as the new method of work organisation means that members of staff are no longer in a position to provide a picture of sales patterns. This is a result of the smaller number of staff employed and also of the reduction in staff-customer contact. In

many cases, staff are processing a high volume of purchases at each payment point, where customers queue for service. In this situation, no clear picture of sales patterns is likely to emerge. The technical capabilities of the EPOS terminals, however, provide this data in detail.

The vast majority of workers in the retail sector are women. In this, as in other areas of the economy, women workers are crowded into particular job categories, such as floor staff and check-out operators. Women make up a minority of those working in storage and a majority of the lower-grade workers within the administration area. The retail sector has traditionally been a labour-intensive area of female employment within the economy. Intense competition has produced systematic cost-cutting within the retail trade affecting both the quality of the service and the numbers of workers employed.

Reducing staffing levels has been a key method of reducing costs within the retail sector. Clearly, this process of reducing the labour content and the quality of the retail service is not attributable to new technological developments. Technological capabilities, however, do enable retail management to offset some of the disadvantages of reducing staffing levels. Overall, staffing levels within major retail outlets, are estimated to have fallen between 30-40 per cent over the last ten years, according to trade union records.

This has happened primarily through the non-replacement of those who have left and the increasing reliance on part-time temporary staff to boost numbers when required. Approximately one-third of the floor staff of most of the larger outlets would be temporary, part-time workers. Retail management argues that fewer staff combined with an increasing reliance on part-time staff has enabled them to offset the growing labour costs within the sector. They point out that an increasing proportion of their staff is on the higher points of the wage scale, due to the fact that fewer women leave on marriage.

Trade unionisation is weak within the retail sector as a whole, but is stronger in the larger outlets. Even within the larger outlets, the use of temporary workers, seasonal and part-time workers makes the establishment of strong workers' organisations a difficult task. The major trade union involved in the retail sector is the Irish Distributive and Administrative Workers' Trade Union (IDATU), who represent floor staff, check-out operators, clerical workers and other job categories where women workers are concentrated. IDATU's major concern in the negotiations concerning new technologies has been to secure agreement on staffing levels. They have viewed the introduction of new equipment as providing an opportunity to establish and defend staffing levels, which have gone through such a dramatic decline over the last decade.

The diffusion of micro-electronic-based technologies within the larger outlets of the retail sector has involved only minimal training of staff. Floor staff and check-out operators, where the majority of women workers are concentrated, are generally trained on the job, through a relatively low-level process of demonstrating the functions of a particular piece of equipment. In most cases, the company supplying the new EPOS terminals would be requested to demonstrate the use of the new equipment and staff would familiarise themselves over a short period of time through direct use.

3.3.1 Profile of the organisation

For the purpose of this study, a more detailed examination of one of the major retail organisations within the food/clothing sector was carried out. Marks and Spencer (Ireland) Ltd. is a subsidiary of a British retail chain and has at present one

major outlet in the commercial heart of Dublin. This organisation has introduced EPOS terminals into its store during the last year and provided the most extensive training of any of the major retail outlets investigated.

Marks and Spencer, Ltd. employs 288 people, of whom 190 are full-time employees. Approximately 98 per cent of the staff are female, employed as clerical workers, floor staff, check-out operators, supervisors and packers. The shop manager, the accountant, porters and some stores staff are male. Pay and conditions in this retail organisation are seen as among the best in the retail trade. It operates a self-service style outlet, with emphasis on the quality of its medium-priced clothing and food and caters to a wide range of age groups.

There are about 30 staff employed in administrative and clerical work which has been computerised since the store opened seven years ago. There have been no significant changes in the operation of this sector in this period. New technologies affect mainly the sales floor area as the old-style cash registers are replaced by the electronic systems. The objective of bringing in the new equipment, according to management, is to provide a more efficient service to customers and to facilitate stock-taking.

3.3.2 New Technology Agreement

The introduction of the EPOS terminals was the subject of an agreement in 1987 between Marks and Spencer (Ireland) Ltd. and IDATU which represents the majority of staff. The agreement reflects the concern, on the part of the Union, with staffing levels and the question of using the equipment to monitor staff performance. The EPOS system can be used to assess on a continuous basis the productivity of each member of staff using the terminals. However, management has agreed not to use the new equipment in this way.

The agreement consists of four major clauses, as follows:

- No reduction in staff numbers.
- Staffing levels to be maintained at the level they were three months before the EPOS was to be introduced.
- EPOS would not be used to monitor staff performance.
- All staff would be fully trained in the use of EPOS.

This agreement has been in operation in the organisation since September 1987, without controversy.

3.3.3 Training and new technology

Training within the organisation is generally carried out on the job. The company characterises most of its workers as unskilled. About four years of second-level schooling is considered adequate educational qualification for floor staff and check-out operators. Clerical and administrative workers would hold higher educational qualifications. Recruitment is carried out primarily through advertising, while some preference is shown towards relatives of those who have worked or are working for the organisation.

Training for the introduction of the EPOS terminals centres around a video detailing the new equipment and its functions which is shown to all staff. This video was developed by the British Head Office of the company. In addition, staff are given time to familiarise themselves with the new equipment once it arrives in the store. Demonstrators from the United Kingdom visited the store as the new equipment was installed to facilitate this process. Thus, all training is "on the job", based on training staff to operate the new equipment to carry

out routine tasks of recording sales and payments.

From the point of view of the management, the new equipment, while internally sophisticated, is not complex to operate and staff would become familiar with its operation within a matter of a few hours. In the long term such equipment can be integrated fully with stores and stock-taking and can also provide a direct link through to the financial sector.

It is also possible to link EPOS terminals into the banking system, thus providing a system for instantaneous deductions from customer accounts and transfer to the company account. Such a link-up is not envisaged however, over the next ten years. Neither does the company envisage any significant changes over the coming decade in its own internal organisation of work.

The introduction of EPOS terminals will not in itself alter the various job categories within the company. Floor staff and check-out operators will continue to occupy the same jobs, carrying out virtually the same tasks, but using more sophisticated equipment. The most important results of the introduction of these machines is an increase in the speed under which transactions can be carried out and in the quality and extent of the information on sales which they record. In this sense, they provide the basis for further streamlining of the organisation in the future. However, it is unlikely that any major impact on staffing levels will be felt. The retail sector, in effect, had already reduced staff to a minimum prior to the introduction of this equipment, a situation which is reflected in the New Technology Agreement and its statement on maintaining staffing levels.

3.4 Case study 4. The Dublin County Council

The Dublin County Council is one of the major organisations of local government within the Irish economy. It has responsibility for the provision of local authority services within the Dublin County area, the largest centre of urban population within the country. The Dublin County Council provides a wide range of services encompassing housing, sewage, roads, parks, libraries and water. At the present time, it is engulfed in a cash crisis due to cut-backs in central government funding. This crisis coincides with the diffusion of new technologies within the organisation and provides a stark example of an organisation on the threshold of exploiting the potential of new technologies but severely constrained as a result of central policies to reduce the level of public expenditure within the Irish economy.

The intention, at central government level, has been for local government organisations to compensate for reduced central funding by increasing rates payable to each authority and by introducing or increasing charges for particular services. However, elected local representatives in the Dublin area, who act as the decision-making body on such issues, have rejected proposals to compensate for reduced central funding by increasing charges on the community. Consequently, the Dublin County Council is faced with a reduced budget at a time when the level of demand for its services is increasing.

3.4.1 Profile of the organisation

The Dublin County Council employs a large workforce of over 3,000 people. Approximately 2,000 of these are "outdoor" workers, engaged in the provision and maintenance of services. These are blue-collar manual workers, both skilled and unskilled. In addition, there are approximately 1,200 white-collar office and technical employees who are engaged in the administration of the organisation and its services. Traditionally, the blue-collar workers were referred to as "servants" and the administrative workers as "officers". This study focuses on the office or administrative workforce where new information technologies are being widely introduced. Table 11 (page 50) gives a breakdown of employees by job category and sex.

The patterns which emerge from this table show a strong concentration of female employees in the clerical and general office work areas. This kind of concentration is common to most areas of the services sector. The "outdoor" workers, who are not represented on this table, are almost exclusively male. Clerical workers are at the lowest levels of the pay hierarchy and are also in those areas where new technologies are particularly important. Annual salaries range from around 6,000 per annum to almost 29,000 per annum across the various grades. Within a broad categorisation of occupations, the following rates apply:

Professional staff	14,000-29,000
Technical staff	8,000-16,000
Inspector/supervisory	9,000-14,000
Clerical officer	6,800- 7,800
Clerk typists	6,600- 7,400

Clearly, clerical work which comprises the majority of women workers is located at the lowest end of the pay hierarchy. Within the blue-collar workforce, there are two

grades which also carry the lowest pay scales: storekeepers, on salaries ranging from 8,900 to 12,200, and key station operators, on salaries ranging from 6,000 to 8,000.

The organisational structure is based on a number of departments, responsible for the various services provided by the Dublin County Council. Table 12 (page 50) gives an indication of the departments and the number of employees within each section. As it was not possible to get a full picture of the organisational structure on a male/female basis, the number of clerical workers in each department is included, as this is the area where most women workers are concentrated.

3.4.2 Introduction of new technology

New information technologies have applications in virtually every area of the organisation's work. New technologies have allowed for the computerisation of the organisation's own administrative tasks as well as the administration of many of the services it provides. For example, the organisation is responsible for the compilation of the electoral register on an annual basis.

Computerisation of the electoral register allows for far greater ease in updating the information it contains and the further application of new technologies links the computerised register to a "desk-top" publishing system.

New technologies have been introduced into the organisation on a systematic basis since 1984. In April 1984, computerisation of the Housing Finance Loans information was introduced, a micro-film reader was brought into the Planning Department, a magnetic-disc unit was brought for the computer section and a monitoring system was introduced for Council meetings. In June 1984, electonic typewriters were brought in and in July of that year travel expenses and creditor's payments were computerised. September 1984 saw the introduction of visual-display units into the salaries and wages section and the creditor's payments section. Salaries were transferred onto the "pay path" system (i.e. direct payment into employees bank accounts).

During 1985, an electronic system for monitoring air pollution was installed and computerisation spread through the housing rents, branch libraries, loans charges and finance sections. Word processing facilities were brought into the computer section. The application of microelectronic technologies within the organisation continued throughout 1986. Word processing systems were brought into the Housing Department on a pilot scheme basis in June. In November 1986, the rates system was transferred from a batch system to an on-line system, the register of electors was computerised and a VDU was brought into the Personnel Department for on-line enquiries.

January 1987 marked the introduction of bar-coding labels for public library books. The year 1987 also saw new VDUs in the Housing Department, more sophisticated software in the Personnel and Finance Departments, a range of personal computers in the Planning Department and training sections and "FAX" telecopiers for use across the various departments. Clearly, electronic-based technologies have a wide range of applications in the organisation, affecting virtually every area of the organisation's activities.

3.4.3 New Technology Agreement

Considerable concern over the possible implications of new technologies for employment, skill levels and health has been expressed within the organisation, particularly within the Local Government and Public Services Union (LGPSU), which is the representative organisation for cleri-

cal, administrative, technical and professional staff. Negotiations between the union and management have been carried out on a regular basis since 1984. The LGPSU has in fact brought in its own programme for evaluation of the impact of the technology, using the pilot scheme for the introduction of word processing in the Housing Department as the focal point for this evaluation. The introduction of technology, its impact on job content and work organisation, and the response of staff members to the technology are currently being monitored by the Workers Research Unit, Dublin.

In March 1984, a New Technology Agreement was signed between LGPSU and the management of the Dublin County Council. The main lines of this agreement are as follows:

- All new equipment and systems will be brought in with the mutual consent of the union and management.
- Employment levels will be maintained during the process of introduction of new technologies.
- Where new technology renders a job monotonous, methods alleviating such problems through, for example, job rotation will be introduced. No job shall result from the introduction of new technology which is excessively "machine paced, robbed of discretion or prevents social interaction".
- No job-holder shall be downgraded. Dublin County Council's commitment to equal opportunities will be maintained.
- The involvement of any outside agency in hardware or software development shall be by agreement with the union.
- A monitoring committee comprising representatives of both management and the union will be established, with responsibility for overseeing and reviewing the agreement.
- Disagreement arising over new technology is to be processed through normal industrial relations machinery and the status quo operates until agreement is reached.
- A training programme is to be introduced.
- Benefits accruing from the use of new technologies will be used to improve the working conditions of staff as well as productivity gains.
- Monitoring of health aspects of VDU use and special consideration for pregnant women will be introduced.

This agreement constitutes the most comprehensive New Technology Agreement examined during the course of this research. It involves mutual consent for the introduction of new technology, continuous monitoring of its impact on work, skills and health, a commitment to improved working conditions as well as increased productivity, a specification of the training required and a guarantee to maintain employment levels. It is also interesting to note that this agreement is based on the maintenance of the "status quo" in circumstances where disputes arise, until that dispute is resolved. The management of both the ESB and the Bank of Ireland placed particular emphasis on clauses within their agreement which stated that change would proceed while negotiations continued. The agreement between the Dublin County Council and the LGPSU reflects the strength of the public sector unions, the importance of new technologies within the work of that organisation and the particular perspective of the LGPSU which has been in the forefront of discussions concerning new technologies within the trade union movement as a whole.

The signing of the New Technology Agreement was not the end of negotiations on new technology between the LGPSU and the Dublin County Council. Late in 1984 a more comprehensive agreement was signed on the health and safety aspects of visual-display units. Under this agreement all members of staff were offered an eye test, financed by the Dublin County Council, before taking up VDU work. A second eye test would be carried out two years later in order to identify any possible deterioration. This agreement further stated that where necessary, staff would be transferred to other work, and if glasses were required these would be paid for by the organisation. In addition, pregnant women and photo-sensitive epileptics would not be required to operate VDUs. It was also agreed that breaks of 30 minutes should be taken after three hours' work and that the physical working environment would be such as to reduce glare, noise and other nuisance.

In June 1986, yet another agreement was signed between the LGPSU and the management of the Dublin County Council concerning the introduction of word processing into the Housing Department. It was agreed that the new system would be introduced on a pilot basis and that its effects on jobs, skills and productivity levels would be monitored before the full systems were to be introduced. This pilot scheme is currently in place.

The LGPSU has put much emphasis on the issue of new technologies realising its importance within the Dublin County Council. They have negotiated an extremely valuable and comprehensive agreement covering, job content, employment levels, health and the right to consultation. They clearly recognise that in many cases the employees they represent welcome the new technologies and their ability to reduce tedium in certain work areas. But they also show an awareness that new technology can result in jobs actually becoming machine-paced, and therefore place emphasis on the capacity of new technologies to improve working conditions and also the quality of services provided by the organisation. In their view benefits accruing from new technologies should be channelled in this manner.

Unfortunately, the achievements in this area of the introduction of new technologies and the resulting agreement have been overshadowed by the deepening expenditure crisis which is affecting the organisation. The Dublin County Council employees are eligible for the voluntary redundancy and early retirement packages which are offered across the public service. These packages are directly linked to the process of reducing public expenditure through cutting back on the public sector pay bill. As they are implemented, they will result in a reduction in employment levels across the public sector, and the Dublin County Council is no exception. From this point of view, the commitment to maintaining employment levels contained in the New Technology Agreement will be undermined by this wider process of rationalisation of the public sector.

3.4.4 Training and new technology

Under the New Technology Agreement, a programme of training arising from the introduction of new technologies was specified. The agreement stated that adequate training and retraining facilities would be provided for staff operation of new equipment. It is also stated that a full training syllabus would be agreed between the union and the Dublin County Council, and that it would include:

- general appreciation of computers and associated terminology;
- appreciation of VDU and associated systems;
- environmental, health and safety implications;

- mechanics of operation;
- familiarisation/education of other staff;
- user requirements in relation to equipment design.

Much of this training programme has been organised by the computer section of the Dublin County Council through general sessions with different departments. Computer staff have a direct involvement in demonstrating equipment to different groups of staff and also in developing software packages specifically suited to the organisation's requirements. In the case of the introduction of word processing systems involving female staff members, a two-day external course was held. This involved women clerical workers mainly from the Housing Department.

Training for new technologies has been task-oriented and conducted mainly on the job. In this sense, it is unlikely to open up opportunities for women workers to move through the organisation. At the present time promotions have virtually halted within the County Council as part of the embargo on recruitment/promotions across the public sector. Against this background, training for new technologies is reduced to a process of familiarisation with the operation of a particular piece of equipment in carrying out specific tasks. New technologies have not resulted in a shake-up of the organisational structure although they do enable the organisation to provide certain services on a more efficient, up-to-date basis. It has also facilitated the internal administration of the organisation.

However, little change is likely in what is a rigid division of labour within the organisation and hence the position of women workers is unlikely to alter significantly. In fact, it is possible that some of the longer-serving women workers will be attracted by the terms of the voluntary redundancy offer, leaving a larger proportion of female employees at even lower pay levels. While the organisation is committed to a programme of equal opportunities, *such a policy remains a paper commitment in a context of no internal promotion, budget restrictions and a rigid job and pay hierarchy.*

4. TRAINING INSTITUTIONS

Training has been one of the key target areas of the current government's programme for rationalisation within the public sector. AnCO (An Comhairle Oiliuna - The Industrial Training Authority) has been amalgamated with the Youth Employment Agency and the National Manpower Service as of 1 January 1988. Up until that date, government-funded training policy and training programmes were the responsibility of AnCO. The new agency FAS (An Foras Aiseanna Saothair - The Training and Employment Authority) now has full responsibility for all government-sponsored training and employment programmes.

With an annual budget of around 100 million, AnCO was engaged in training programmes involving around 40,000 adults every year, of whom about 17 per cent were women. All courses run by AnCO were open to both men and women applicants, but women tended to crowd into traditional areas (e.g., hairdressing or office procedures) and have been a very small minority among apprentices and other areas of technical training. New technology is seen by AnCO, and the new agency FAS, as a key economic sector to promote equal opportunities and greater participation rates among women. Special initiatives have been taken to encourage women trainees into this area.

AnCO was funded by a direct government grant, the European Social Fund and an employment levy deducted at source from wages and salaries. Approximately half of its budget came from the European Social Fund. All of these sources of financing will be drawn on by the new agency FAS. FAS contracts with the private training sector to provide training courses in a wide range of areas. Such courses involve about a third of all trainees in any one year and are subject to monitoring and evaluation by FAS. Course fees are subject to satisfactory evaluation. Trainees receive a training allowance which is the equivalent of the urban rate of social welfare, plus meals, travel and accommodation allowances. Child-care facilities are not formally provided but informal arrangements have been made in a few cases. Training centres are located in all major urban centres where information on both training and employment is available.

FAS runs a wide range of vocational training courses lasting from 3.5 to 6 months depending on the skills involved. Trainees are selected primarily through interview, although aptitude and "trainability" tests are also given for entry to technical courses. There is a "personal development module" built into every FAS training programme which includes life and social skills, career counselling, career planning and jobseeking skills. All programmes are subject to ongoing evaluation, and adjustments are made where changing training needs are identified. Placement monitoring takes place after the completion of each training course.

FAS has a detailed Equal Opportunities Programme, which is examined below. Emphasis is placed on the use of new tech-

nology within its programme, based on the belief that female trainees need to have their skills updated in order to keep abreast of technological change. The policy is to encourage women into the non-traditional skill areas of the new technology industries, such as electronics, in order to take into account the impact of technological change on traditional female occupational areas, for example, clerical and assembly work.

FAS runs a wide range of training courses within which the participation rates of women vary considerably. Some areas attract almost exclusively female trainees; others are completely male dominated. For the purposes of this study, courses involving new technology are examined in detail in order to explore the pattern of female participation. What emerges clearly is a highly uneven pattern of participation of women in new technology-based training. The information in tables 13 and 14 (page 51) is for 1987, in order to get the most up-to-date picture of the kinds of skills women trainees are acquiring in the new technology area. The information covers both internal and external training programmes in which AnCO was involved in 1987 and for which the new agency FAS will have responsibility in 1988.

Table 13 gives a clear picture of the participation rate of women and men on internal training courses in AnCO during 1987. While women account for more than half of the trainees on these courses, they tend to be crowded into those courses concerned with office procedure and automation and remain a minority in the more technically-skilled courses, such as electronics, computer-aided design and software application and development. The greatest single number of male trainees is on the computer application course, in which there is an equal participation of men and women trainees. Given that women make up only about one-third of the workforce, their rate of participation on these courses is generally very high. However, the concentration of women trainees into word processing and office procedures demonstrates the traditionally subordinate position of women within the workforce.

The External Training Division of AnCO is also involved in training courses in new technologies. During 1987, 342 women participated in such courses. Table 14 shows the number of female trainees in training or having completed training, i.e. "trained" in November 1987 under the External Training Division.

It is interesting to note from this table that the participation rates of women on externally-run training courses in the area of new technology are significantly lower than in those courses run within AnCO training centres. Less than one-third of the trainees on these courses are women, with a particularly low rate of participation in courses dealing with computer hardware.

4.1 Equal opportunities programme

AnCO formally adopted a policy on equal opportunities in 1985. This policy concerned AnCO's role both as employer and as the national training agency. To implement this policy an Action Plan was adopted by the organisation detailing measures to be taken to promote equality of opportunity among its own employees and also within its training programmes.

The Equal Opportunities Sector of AnCO ran a series of "equality awareness" information seminars for training centre staff through 1987 and 1988. A video entitled "Equal Opportunities in Action" was produced and circulated to all training centres. A number of training centres also ran their own three-day training courses for staff. These courses were organised for staff involved in recruitment, placement and welfare. From 1987, external trainers

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were contractually obliged to abide by AnCO's equal opportunities policy.

AnCO's Equal Opportunities Programme has as its objective the achievement of higher rates of participation by women in their courses, but also to redress "established patterns of participation by women and men in traditional courses which lead to their consequent employment in traditional occupations". The action programme sets out specific targets for participation of women and men in courses in specific employable skills. Each training centre details targets for courses run in those centres and progress reports are regularly produced.

For example, Sligo Training Centre set a 25 per cent target participation of women in welding/fabrication, computer applications and a range of other courses. They also established a 25 per cent target participation of men in hairdressing and computerised office procedures courses. By December 1987, they reported an 8 per cent participation rate of women in courses in welding/fabrication and a 30 per cent rate in courses in computer applications. They also reported a 30 per cent participation rate of men on courses in hairdressing and a 17 per cent rate on courses in computerised office procedures. Training centres also hold promotional activities, such as "open days" and talks given in schools during which equal opportunities were specifically promoted.

AnCO's Equal Opportunities Programme also incorporates a number of "positive action" initiatives including specific courses for women designed to encourage them to enter non-traditional areas of work or to address the needs of women returning to work after child-rearing. These courses are in areas such as management training and training for self-employment. They also include courses for women in new information technologies.

4.2 Equal opportunities and training for new technology

The whole area of training for new technologies is a central part of AnCO's Equal Opportunities Action Plan as most training centres have selected new technology courses when establishing target participation rates for their centre. Target participation rates for women on the more advanced new technology-related courses tend to be between 20 and 30 per cent. Target participation rates for men on office procedures and office automation courses tend to be between 10 and 20 per cent.

In order to address the question of access by women to non-traditional careers in new technology industries, specific initiatives were taken by AnCO during 1987. These initiatives come under the category of "pilot programmes" and are experimental in nature. Their emphasis is on "positive action" through the establishment of specific courses for women trainees, designed to achieve specific objectives.

Firstly, a bridging programme was run for "Women in Electronics", which was designed to create the conditions for women trainees to move into the more highly-skilled training programmes available in the new technology area. Twenty-four women participated in the bridging course. Of these, 17 have graduated into mainline technical programmes now being run by FAS. Training centres have also engaged in specific promotional activities to encourage interest among women in new technology. In providing such special courses for women, AnCO recognised the importance of "positive action" initiatives, in order to provide a small number of women with the opportunity to breakthrough the entrenched segregation of women on the labour market.

In addition, a "new technology workshop" was established in December 1987, designed to enable women to pursue non-

traditional careers in new technology industries. The objective of this technology workshop for women, which is a European Social Fund project, is to "provide women with the necessary skills which would enable them to enter the modern electronics industry or the necessary micro-computing technical skills which would enable them to enter the software industry at a technical level"[4].

The workshop is open to unemployed women who were selected through aptitude test and interview. The course lasts for 48 weeks. Within the electronics stream the course covers basic and advanced electronics, whereas the micro-computing stream covers elementary and advanced micro-computing and programming. Successful participants in the course will achieve City and Guilds of London standard. A unique development associated with the new technology workshop is the provision of crèche facilities for the use of course participants. A course for women on film and video had also been planned for 1987 but has been deferred until 1988.

4.3 Private training organisations

There is a wide range of private training organisations which provide training courses in new technologies. Most of these are companies involved in the sales of new technological equipment who also provide courses in the use of that equipment. Others are companies which have been established for the sole purpose of providing training programmes in computers, word processing and other aspects of electronic-based technologies. Some of these organisations would have been involved in the "external" training courses which have been funded by AnCO over many years. In such circumstances, AnCO contracts a private agency to carry out an agreed training programme. Trainees are selected by AnCO and paid the normal training allowances through AnCO. In these kind of situations, there is effectively the joint involvement of both the State and the private sector.

A further type of involvement by the State in what is effectively private training occurs where the State grant aids a privately-run training agency. The Irish Management Institute receives a direct grant from the State and supplements its income by the fees charged for its courses. Some of the courses it runs are concerned directly with the area of new technology.

Dr. Eunice McCarthy examined training and development programmes in a variety of public and private sector organisations in the course of her research on progress towards equal opportunities, published in 1986. This research explored the status of women workers in over 40 different organisations surveyed in 1972 and again in 1983. Most of the organisations had training departments where the majority of training was provided, emphasising learning how to operate specific pieces of equipment or to perform particular tasks on a machine. External training tended to be confined to specialist staff. McCarthy found that the focus of training was on the "improvement of the existing job" rather than promotion or self-development. In all cases, companies stated that women had equal access to training but that training was tied to specific job categories, within which women may be severely under-represented. Managers or supervisors selected staff for training in over two-thirds of the companies surveyed, thus their perceptions of and attitudes towards female candidates would be a crucial factor in influencing women's participation.

McCarthy also looked in detail at the kinds of courses attended by female employees

4 Course profile, FAS, December 1987.

and found that in the clerical and office area they were mainly the "bread and butter" courses associated with office skills, phone techniques, reception training, office management, use of special machines associated with new technology (word processors, VDUs, computers, print-out technology, etc.), as well as courses designed to improve secretarial skills. In the case of new technological equipment, such as VDUs or word processors, a trend whereby a "key female employee" would be sent for external training and would then function as an internal trainer was emerging. She also highlighted the banking sector as an area where women are the majority of trainees participating in courses tied to first and second-level jobs.

The participation of women in training courses offered by a management training institute was also reviewed, covering a wide range of courses from two days to three months in duration. Findings showed a relatively low rate of participation of women in these courses. Women accounted for less than 10 per cent of those attending marketing courses, 16 per cent in computer courses, 27 per cent in courses on personnel management, and 46 per cent in word processing courses. In the computer training area, women attending courses tended to be drawn from specialist computer areas, whereas male trainees included financial and development managers. Word processing showed nearly equal participation rates between men and women, but even here, women tended to come from secretarial jobs while men came from personnel and service departments. Table 15 (page 52) shows the breakdown of attendance in these courses at the institute.

McCarthy's research highlights the emphasis on on-the-job training, particularly in the office sector. Her findings coincide directly with the pattern of training evident in the case studies, where training aimed to familiarise employees with new equipment, procedures and work systems rather than career development or promotion. External training tends to be more specialist in nature, but access to this kind of training is mainly limited to specialist and managerial staff. While some external training has taken place around new technologies, this has consisted of two or three-day courses on word processing for female clerical workers. Such training does little to open up a wider range of job opportunities for women workers.

5. CONCLUSIONS AND RECOMMENDATIONS

New information technologies are being applied on a widespread basis across the services sector of the Irish economy, particularly over the last five years. In both private and the public services new technologies are being used to increase the efficiency and reduce the cost of internal administration as well as to provide better quality and a wider range of services. Traditional methods of recording information, noting transactions, storing data based on paper-filing systems are being replaced by centralised computerised data storage and retrieval systems, combined with decentralised access using VDUs at individual workstations.

Women workers make up the vast majority of workers within the services sector of the Irish economy. Service employment is the most important source of employment for women within the formal economy. The services sector has acted as a source of increased employment opportunities for the growing proportion of women entering the formal economy over the last 15 years. Women workers are crowded into the lowest grades and lowest-paid areas of service employment. The vast majority of female service workers are characterised as unskilled, over-represented at the base of the occupational hierarchy and severely under-represented at the top echelons of service organisations. Clerical work is the single most important occupational category for women service workers and it is in this area where the impact of new information technologies is the most dramatic.

For the most part, the introduction of new technologies is not being accompanied by a direct reduction in employment levels but rather by a dramatic reduction in recruitment. Service organisations are using new technologies to extend the range of service activities in which they are engaged without employing additional staff. A marked reduction in staff turnover due to the rationalisation of service organisations, accompanied by the application of new technologies, is causing a bottle-neck in the promotional and career development opportunities for many employees.

The application of new technologies is only one aspect, albeit an important one, in the transformation of many service activities. In the banking sector, for example, the nature and range of customer services has been undergoing major change, characterised by an increasing emphasis on specialised or customised services. In the retail sector, a similar process of change has been happening, with a greater emphasis on self-service style operations, particularly within the larger retail outlets. As a consequence, staffing levels had fallen significantly in this sector prior to the introduction of micro-electronic-based technologies. In this sense, it is difficult to estimate the precise effect of new technologies on employment levels, as the influence of a variety of factors must be considered simultaneously.

Within the public services area, internal organisational change is largely dictated by central government policies aimed at

reducing public expenditure. The impact of these policies is less evident in the commercial "semi-State" sector than in the area of direct governmental services. However, promotional opportunities, recruitment and career development opportunities are severely restricted across the public sector. As a result, the introduction of new technologies is occurring at a time when financial constraints are imposing rigidity and immobility in the organisational structures of many public sector agencies.

Most of the organisations examined in the course of this study had adopted "equal opportunities policies" over the last few years. Such policies cover recruitment, training, promotion, pay and other conditions of work. Such policies are critical as a means of recourse, primarily for female employees, who experience discrimination on the grounds of sex or marital status. On the other hand, most of the "equal opportunities" policies are designed to operate within an existing organisational structure without specific policies of "positive action". In this sense, while they can achieve some improvements in the position of women, these efforts tend to be marginalised by the overwhelming influence of the low status of women service workers within the services sector. Therefore rigid organisational structures, within which women are particularly disadvantaged, are unlikely to undergo marked changes as a result of the adoption of "equal opportunities" programmes.

For example, all of the organisations surveyed stated that they had a policy of equal access to training for female and male employees. In practice however, selection for training was made by supervisors or managers, who were mostly male. Their decisions were likely to reflect the negative attitudes to women in work which are prevalent in society at large. Women workers then are vulnerable to the thinking of middle management who are key planners in implementing recruitment, training and promotion policies. In some cases, equal opportunities awareness programmes were initiated, but these tended to be a one-time affair.

Equality officers had been appointed in two of the case-study organisations, but it was too early to judge their impact. One important aspect of the recent emphasis on "equal opportunities" programmes however, is that the gathering and analysis of data concerning the position of women workers is likely to be much more extensive in the future, thus facilitating a deeper analysis of the changing status of women workers. In two of the organisations studied, their equal opportunities programmes specifically committed the organisation to produce regular information on the position of women employees including their participation rates in training programmes.

Training for new technologies was at a low level in all of the organisations examined for this report. Due to the concentration of women workers in the lowest grades of mainly clerical work, the majority of female employees would be required to have some knowledge of new equipment and machinery coming into the organisation. For the most part, training consisted of demonstrations (carried out by internal computer staff or representatives of the company distributing the equipment) of how specific tasks could be performed on the equipment. Training appeared to be overwhelmingly task-oriented. In most cases, knowledge of how to perform specific tasks quickly and efficiently, was not felt by management to require a deeper understanding of the technology itself.

Specialist computer staff (mainly male) within service organisations tended to have a direct involvement in the whole process of introduction of new technologies, including selection of equipment, development of software and

training. In many cases, software systems were designed by technical employees to meet the specific needs of the organisation. In some cases, clerical workers attended three-day (or shorter) word processing courses, generally organised by the company distributing the equipment, or were shown videos explaining and demonstrating the use of the new equipment. Where specialised training was available, it tended to be confined to technical and management staff, among whom women were heavily under-represented.

Training for new technology tends to be aimed at "improving the existing job" rather than at career development or promotion. In some cases, the ease of operation of the new equipment meant that little training was needed before staff members could use the new systems. In most cases, familiarisation with new equipment and new work systems was done "on the job". One of the case-study organisations developed a new training system to cope with the introduction of new technologies. Individual staff members were selected in each branch of the organisation to undergo intensive training. These staff members then returned to the local branch structure and trained other employees in the "local environment". Such a system was designed to ensure that training would be carried out at minimum cost and disruption, and with the highest degree of relevance possible to the needs of branch management.

New Technology Agreements were in place in all the case study organisations. The emphasis of these agreements is on maintaining of employment levels, securing financial compensation in return for the productivity gains associated with new technologies, and establishing consultation and grievance procedures. In all cases, management conceded to a commitment to a policy of "no compulsary redundancies" in return for a disputes procedure. In all but one of the agreements, disputes procedures specified that work would continue and new systems would be implemented, while negotiations were in progress. Management laid much stress on this, particularly in the banking sectors where disputes had resulted in significant delays in the process of introduction of new technologies.

In most cases, the agreements stated that the "required" training would be carried out, but little specific detail on implementation was included. The most comprehensive agreement reviewed contained detailed measures concerning health and safety aspects of new technologies, a commitment to a high level of consultation and an agreement that no change would be implemented before mutual consent between management and union has been established. In another public sector organisation the agreement included a specific commitment to train a small number of female employees in non-traditional areas, including information technology.

Trade union organisations have been faced with negotiations concerning new technologies in a period of intense crisis within the Irish economy, with extremely high rates of unemployment and little improvement in pay or conditions in work. In this sense, the trade union movement has itself been through a period of defensiveness, during which the issue of employment levels has overshadowed all other concerns. This issue is reflected in the terms and focus of the various new technology agreements negotiated in the services sector. As a result, training has not received much attention from those trade unions negotiating new technology agreements. However, the existence of such agreements is, in itself, an indicator of the strength of workers' organisations in this country whereby employers must negotiate and reach agreements, even in the relatively under-unionised services sector of the economy. Perhaps greater emphasis on some of the wider implica-

tions of technological change will emerge over the coming decade.

National training policy has put increasing emphasis in recent years on equality of access to employment and the encouragement of women into non-traditional skill areas. While some clear improvements have been recorded in the participation rates of women in certain technical courses, training still reflects a high level of sex segregation. Training for new technologies shows a higher than average rate of female participation, but rates tend to vary between different courses with higher female participation rates emerging in courses oriented towards office procedures, word processing and general computer appreciation. A number of important and interesting new initiatives have been taken by the national training agency over the past two years, aimed at increasing the level and quality of female training for new technologies, and involving special courses for women in electronics and information technology, based on a "positive action" approach.

In conclusion, it must be stated that new information technologies are being implemented within the services sector of the Irish economy without providing significant training or career development opportunities for women workers. Information technologies are producing a more efficient and cost-effective services sector but with little impact on organisational structures. The position of women workers within the services sector, then, will continue to be predominantly low-paid and unskilled, despite the introduction of sophisticated new equipment. Only a small percentage of women workers in administrative and technical areas will have greater access to new technology and those training opportunities open to specialised staff.

For the future, more emphasis should be placed on training and career development in negotiations concerning new technologies. In addition, it is essential that "equal opportunities" programmes contain specific "positive action" initiatives, if women workers are to break out of their current narrow confines within service organisations. Despite the context of economic recession and public expenditure cut-backs, "equal opportunities" policies must contain specific initiatives designed to open up a wider range of job opportunities for women. Unless such policies are modified in this way, they will continue to have only a marginal impact on the position of women workers within the economy, a position which the introduction of new information technologies is doing little to alter.

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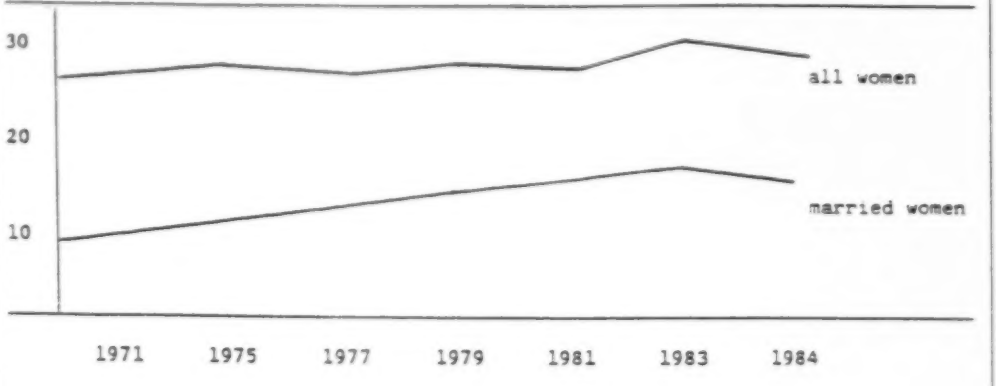
TABLES

Table 1. Women and the labour force ('000)

	1971	1981	1984
Working population aged 15-64			
Total	1 717.3	2 030.7	2 112.6
Women	847.9	1 002.0	1 041.8
Labour force			
Total	1 125.4	1 272.1	1 314.0
Women	289.3	358.6	385.9

Source. John Blackwell. Women and the labour force. Dublin, Employment Equality Agency, Aug. 1986

Table 2. Activity rates of women, 1971-84



Source. John Blackwell. Women and the labour force. Dublin, Employment Equality Agency, August 1986.

Table 3. Employment structure of women - 1984

	Numbers	Percentage
Agriculture	19 000	7.0
Industry	62 500	17.0
Services	257 500	76.0

Source: John Blackwell. Women and the labour force. Dublin, Employment Equality Agency, Aug. 1986.

Table 4.

Services sector	Numbers of women workers	Ratio women/ all persons (percentage)
Wholesale distribution	8 500	19.2
Retail distribution	49 000	39.6
Insurance, finance and business services	20 500	46.9
Transport, communications and storage	13 800	19.9
Public administration and defence	21 000	28.9
Professional services	102 500	57.0
Personal services	36 800	63.6

Source. Labour Force Survey, 1984.

Table 5. Employment structure in the non-industrial civil service

Grade	Percentage of female
Secretary	0
Deputy secretary	0
Assistant secretary	1.1
Principal officer	3.4
Assistant principal	19.9
Administrative officer	31.4
Higher executive officer	34.3
Executive officer	40.3
Staff officer	41.8
Clerical officer	65.1
Clerical assistant	83.5

Source. Ross. Employment in the public domain in recent decades. ESRI Paper 127, 1986.

Table 6. Occupational breakdown for the civil service

Occupational group	Percentage of female
Administrative and executive	27.4
Clerical and staff	63.1
Typing	99.5
Professional	7.8
Inspectorate	6.9
Supervisory and manipulative	25.2
Messenger/cleaner	25.4
All groups	34.8

Source. Glavey. "Civil servants: How many? What do they do?", in Seirbhis Phoibli, Nov. 1981.

Table 7. Participation in formal training

	1982-83 (%)		1983-84 (%)	
	Male	Female	Male	Female
Lending	58	42	55	45
Administration	49	51	54	46
Customer service	40	60	43	57
Others	33	67	42	58

Training in the lending field involved manager, assistant manager and officer grades.

Training in the administration field involved assistant manager and officer grades.

Training in customer service involved all grades.

Table 8. Staff employed in ESB in May 1986

Category	Male	Percent-age	Female	Percent-age	Total
Engineer	765	9	6	1	771
Officer staff	944	45	1 165	55	2 109
Technical staff	1 523	97	48	3	1 571
Craft and general	7 645	96	347	4	7 992
Total	10 877	87	1 566	13	12 443

Table 9. Distribution of staff by "main category classification" showing male/female representation, June 1985

Main category	Male	Female	Total	Percent-age of male	Percent-age of female
Demonstrator	0	18	18	0.0	100.0
Canteen staff	1	92	93	1.0	99.0
Public relations	8	2	10	80.0	20.0
Executives/administrators	659	139	798	83.0	17.0
Sales staff	55	5	60	92.0	8.0
Other professional	39	2	41	95.0	5.0
Training staff	54	2	56	96.0	4.0
Other technical	227	5	232	98.0	2.0
Electrician	1 731	14	1 748	99.0	1.0
Engineer	765	6	771	99.0	1.0
Institutional technician	87	1	88	99.0	1.0
Porter/watchman	76	1	77	99.0	1.0
ETS/D men	425	1	426	99.7	0.3
Chemical staff	37	0	37	100.0	0.0
Comm. technicians	50	0	50	100.0	0.0
Control room operator	74	0	74	100.0	0.0
Craftsmen	138	0	138	100.0	0.0
Dept. assistant	43	0	43	100.0	0.0
Fish conservation staff	8	0	8	100.0	0.0
Fisheries C&G	44	0	44	100.0	0.0
General workmen	1 700	0	1 700	100.0	0.0
Gen station dayworker	851	0	851	100.0	0.0
Lagger	6	0	6	100.0	0.0
Linesmen	1 252	0	1 252	100.0	0.0
Load development staff	26	0	26	100.0	0.0
Mechanical fitter	294	0	294	100.0	0.0
Messenger	3	0	3	100.0	0.0
Meter reader	88	0	88	100.0	0.0
Shift staff reg.	752	0	752	100.0	0.0
Store staff	205	0	205	100.0	0.0
Transport driver	334	0	334	100.0	0.0
Technical supervisor	568	0	568	100.0	0.0

Table 10. Female administrative staff, May 1986

Level	Number	Married	Single
Level J	3	1	2
Level I	1	nil	1
Level H	5	2	3
Level G	17	6	11
Level F	24	13	11
EOs	89	34	55

Table 11. Number of employees by job category, January 1987

Job category	Male	emale	Total
Clerk typist	0	35	135
Clerical officer	62	06	168
Assistant staff officer	30	3	73
Senior administrative officer	12	0	12
Library assistant	14	55	69
Senior library assistant	4	13	17
Librarian	2	12	14
Senior librarian	3	8	11
Staff officer	51	36	87
Senior staff officer	41	12	53
Administrative officer	27	2	29
Rent collector	23	0	23
Clerical officer/secretary	0	22	22
Draughtsman/technician 1	30	2	32
Draughtsman/technician 2	42	5	47
Supervisors/inspectors	175	37	212
Professionals	11	39	50
Total	516	488	1 004

Table 12. Organisational structure

Department	No. of staff	No. of clerical workers
Roads department	66	42
Sanitary department	45	25
Housing department	114	67
Development department	103	39
Finance department	103	47
General purposes department	57	23
Law department	23	21
Planning department	79	43
Libraries department	134	4

Table 13. Total trained in 1987 in new technology type courses in AnCO training centres

Course	Male	Female	Total
Basic electronics	75	10	85
Digital electronics	66	23	89
Industrial electronics	98	14	112
AnCO electronics	71	4	75
Bookkeeping/computer appreciation	28	68	96
Electronic servicing	41	1	42
Micro-computer maintenance	11	2	13
Computerised office system	12	101	113
Automated office	1	40	41
Draughting CAD/CAM	23	3	26
Computer-assisted training	10	1	11
Word processing/electronic office	18	260	278
Computerised office	8	92	100
Micro-computer management	32	25	57
Computer application	124	130	254
Micro-electronics	37	1	38
Data communication	17	-	17
Information technology/electronics and computer	1	6	7
Introduction to electronics	7	9	16
Electronic assessment	6	-	6
Job preparation/ITEC	8	5	13
New technology	25	1	26
Total	773	809	1 582

Table 14. External training courses, November 1987

	In-training			Trained		
	Male	Female	Total	Male	Female	Total
Computerised manufacturing	27	14	41	131	52	183
DP software	66	55	121	151	119	270
DP hardware	87	27	114	174	45	219
Advanced technology	16	6	22	92	24	116
Total	196	102	298	548	240	788

Table 15. Attendance at external training courses in a management training centre by type of course and by sex from mid-1982 to mid-1983

Course title and number of courses	Male	Female	Total	Female as percentage of total
Word processing (N=4)	42	30	72	41.6
Management/personnel training (N=6)	63	23	86	26.7
Credit financial (N=6)	66	22	88	25.0
Computer courses (N=7)	88	17	105	16.11
Marketing courses (N=6)	74	7	81	9.4
Production management (N=3)	48	4	52	7.6
Total	381	103		

Source. Table 9 from "Transitions to equal opportunity at work: Problems and opportunities", by Dr.Eunice McCarthy, published by the Employment Equality Agency, 1986.